

APPENDIX 1

Program for Baselineing, Normalizing, Interpolating Then Calculating Spectral Overlap Integrals

```
5      C      This program has a non-standard DO WHILE loop

      INTEGER NPTS, NMAX, ROWS, ITER
      INTEGER EOF1, FLERR1, FLERR2
      INTEGER EOF2, FLERR3, FLERR4
10     INTEGER EOF3, FLERR5, FLERR6
      INTEGER FLERR7
      INTEGER i,j
      CHARACTER*30 fname1, fname2, fname3, fname4
      CHARACTER*30 fname5, fname6, fname7
15     PARAMETER(NMAX=3500, LAMDA=601)
      REAL x,xx1 (NMAX) ,yyl (NMAX),INTERV1
      REAL xx2 (NMAX) ,yy2 (NMAX), INTERV2

      REAL xx3 (NMAX), yy3 (NMAX),INTERV3
20     REAL yil (NMAX), yi2 (NMAX), yi3 (NMAX), yc (NMAX)
      REAL area
      CHARACTER*1 SUBSTR, INITAR, LIGHT, INTMED

      FLERR1=0
25     FLERR2=0
      FLERR3=0
      FLERR4=0
      FLERR5=0
      FLERR6=0
30     FLERR7=0
      EOF1=0
      EOF2=0
      EOF3=0
      INTERV1=0
35     INTERV2=0
      INTERV3=0
      area=0

      write(*,*) 'Do you wish to output intermediate files? (Y/N)'
40     read(*,'(A)') INTMED

      write(*,*) 'Do you wish to process a substrate file? (Y/N)'
      read(*,'(A)') SUBSTR

45     IF ((SUBSTR.EQ.'Y') .OR. (SUBSTR.EQ.'y')) THEN
```

```

ITER=0
do 5 ITER=1, NMAX
    xx1 (ITER)=0
    yy1 (ITER)=0
    yil (ITER)=0
5    continue

```

```
write(*,*) 'Enter the name of the input substrate file:'  
read(*, '(A)') fname1
```

```
open
(UNIT=11,FILE=fname1,STATUS='OLD',IOSTAT=FLERR1,E
RR=101)
```

ROWS=0

```
do while ((EOF1.EQ.0) .AND. (ROWS.LT.NMAX))
    ROWS=ROWS+1
    Read (11,*,IOSTAT=EOF1) xx1 (ROWS), yy1 (ROWS)
end do
```

```
close (UNIT=11)
NPTS=0
```

[illegible]

```
call baseln(yy1,NPTS)
```

IF ((INTMED.EQ.'Y') .OR. (INTMED.EQ.'y')) THEN

```

write(*,*) 'Enter the name of the output substrate file:'
read(*,' (A)') fname2
open
(UNIT=12,FILE=fname2,STATUS='NEW',IOSTAT=FLERR2,
ERR=102)

```

END IF

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```

x=0
i=0
j=0
5
do 12 i=1, LAMDA
    x= (i-1)+200
10    call locate(xx1,NPTS,x,j)
    if ((j.eq.0). OR. (j.eq.NPTS)) then
        INTERV1=0
    else
15        INTERV1= ((yyl(j+1)-yyl(j)) / (xx1(j+1) - xx1(j))) *
        (x-xx1(j))
        +
        +yyl(j)
    end if
20    yi1 (i)=INTERV1
    IF ((INTMED.EQ.'Y') .OR. (INTMED.EQ.'y')) THEN
25        if ((j.eq.0) .OR. (j.eq.NPTS)) then
            GO TO 12
        else
            write(12, '(1x, f7.2,i6,3f12.2)')x,j,xx1(j),xx1(j+1),
+            INTERV1
30            endif
        END IF
35        12 continue
        IF ((INTMED.EQ.'Y') .OR. (INTMED.EQ.'y')) THEN
            close (UNIT=12)
        END IF
40        ELSE
            ITER=0
            do 14 ITER=1, LAMDA
                yi1 (ITER) =1
45            14 continue
        ENDIF

```

```

write(*,*) 'Do you wish to process an initiator file? (Y/N)'
read(*,'(A)') INITAR

5      IF ((INITAR.EQ.'Y') .OR. (INITAR.EQ.'y')) THEN

          ITER=0

          do 15 ITER=1,NMAX
10              xx2 (ITER) =0
                  yy2 (ITER) =0
                  yi2 (ITER) =0
15              continue

15      write(*,*) 'Enter the name of the initiator file:'
          read(*,'(A)') fname3

          open
          (UNIT=13,FILE=fname3,STATUS='OLD',IOSTAT=FLERR3,
20          ERR=103)

          ROWS=0

          do while ((EOF2.EQ.0) .AND. (ROWS.LT.NMAX))
25              ROWS=ROWS+1
                  read(13,*,IOSTAT=EOF2) xx2 (ROWS), yy2 (ROWS)
          end do

          close (UNIT=13)

30      NPTS=0

          IF (EOF2.NE.0) THEN
              NPTS=ROWS-1
35              write(*,1(14,1X,A12)) NPTS,'points read.'
          ELSE
              NPTS=ROWS
              write (*,'(A28,I4,A12)') 'Too many data points! First ',
+                  NMAX,' points read...'
40              END IF
                  call baseln (yy2,NPTS)

          IF ((INTMED.EQ.'Y') .OR. (INTMED.EQ.'y')) THEN

45              write(*,*) 'Enter the name of the output initiator file: '
                  read(*,'(A)') fname4

```

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```

open
(UNIT=14,FILE=fname4,STATUS='NEW',IOSTAT=FLERR4,
ERR=104)

5      write(*,*) 'Writing data...'

      END IF
      x=0
      i=0
10     j=0

      do 22 i=1,LAMDA
          x=(i-1)+200

15         call locate (xx2,NPTS,x,j)
         if ((j.eq.0).OR. (j.eq.NPTS)) then
             INTERV2=0
         else
             INTERV2=((yy2(j+1)-yy2(j)) / (xx2(j+1) - xx2
20             (j))) * (x-xx2 (j))
             + yy2 (j)
         end if
         yi2 (i)=INTERV2
         IF ((INTMED.EQ.'Y') .OR. (INTMED.EQ.'y')) THEN
25             if ((j.eq.0) .OR. (j.eq.NPTS)) then
                 GO TO 22
             else
                 write(14,'(1x,f7.2,i6,3f12.2)') x, j, xx2
30             (j),xx2 (j+1),
                 + INTERV2

             endif
35         END IF

22         continue

         IF ((INTMED.EQ.'Y').OR. (INTMED.EQ.'y')) THEN
40             close (UNIT=14)

         END IF
         ELSE
45             ITER=0

```

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```

do 24 ITER=1,LAMDA
    yi2 (ITER)=1
24      continue

5      ENDIF
write(*,*) 'Do you wish to process a light source file? (Y/N)'
read(*,'(A)') LIGHT

10     IF ((LIGHT.EQ.'Y').OR. (LIGHT.EQ.'y')) THEN
        ITER=0
        do 25 ITER=1,NMAX
            xx3 (ITER) =0
            yy3 (ITER) =0
            yi3 (ITER)=0
15      25      continue

        write(*,*) 'Enter the name of the light source file:'
        read(*,'(A)') fname5

20     open
        (UNIT=15,FILE=fname5,STATUS='OLD',IOSTAT=FLERR5,
        ERR=105)

        ROWS=0
25     do while ((EOF3.EQ.0) .AND. (ROWS.LT.NMAX))
            ROWS=ROWS+1
            read(15,*,IOSTAT=EOF3) xx3 (ROWS), yy3 (ROWS)
        end do

30     close (UNIT=15)

        NPTS=0
        IF (EOF3.NE.0) THEN
35         NPTS=ROWS-1
            write(*,1 (14,1X,A12)1) NPTS, 'points read.'
        ELSE
            NPTS=ROWS
            write (*,'(A28,I4,A12)') 'Too many data points! First ',
40         +              NMAX,' points read...'
            END IF

            call norm (yy3,NPTS)

45     IF ((INTMED.EQ.'Y').OR. (INTMED.EQ.'y')) THEN

            write(*,*) 'Enter the name of the light source output file:'

```

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```

        read(*,' (A)') fname6
        open
        (UNIT=16,FILE=fname6,STATUS='NEW',IOSTAT=FLERR6,
5         ERR=106)

        write(*,*) 'Writing data...'

        END IF
        x=0
10       i=0
        j=0

        do 32 i=1,LAMDA
            x= (i-1)+200
            call locate (xx3,NPTS,x,j)
            if ((j.eq.0) .OR. (j.eq.NPTS)) then
                INTERV3=0
            else
                INTERV3= ((yy3(j+1) - yy3(j)) / (xx3(j+1) -
15                xx3(j))) * (x-xx3 (j))
                +
                +yy3 (j)
            end if
            yi3 (i) =INTERV3
            IF ((INTMED.EQ.'Y') .OR. (INTMED.EQ.'y')) THEN
20                if ((j.eq.0).OR. (j.eq.NPTS)) then
                    GO TO 32
                else
                    write(16,'(1x,f7.2,i6,3f12.2)') x,j,xx3 (j),xx3 (j+1),
25                    +
                    INTERV3
                endif
            END IF

            32          continue
            IF ((INTMED.EQ.'Y') .OR. (INTMED.EQ.'y')) THEN

                close (UNIT=16)

40          END IF

          ELSE
            ITER=0

45          do 34 ITER=1,LAMDA
              yi3 (ITER) =1
              34          continue

```

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```
ENDIF

ITER=0

5 DO 40 ITER=1,LAMDA
    yc (ITER)=0
40 CONTINUE

10 DO 55 i=1,LAMDA
    yc (i) =yi1 (i)*yi2 (i)*yi3 (i)
55 CONTINUE

write(*,*) 'Enter the filename for cumulative data:'
15 read (*, '(A)') fname7
open
(UNIT=17,FILE=fname7,STATUS='NEW',IOSTAT=FLERR7,
ERR=107)
write(*,*) 'Writing data...'
20 CALL integ (yc,LAMDA,area)

write(*, '(1X,A26,A11,F12.6)') 'The area under the product',
+'curve is:',area
25 write(17, '(1X,A26,A11,F12.6)') 'The area under the product',
+' curve is: ',area

DO 60 i=1,LAMDA
30 x= (i-1)+200
write(17, '(1X,F6.1,2F11.2,F11.4,E15.6)') x,yi1 (i),yi2
(i),
+ yi3 (i) ,yc (i)
60 CONTINUE
35 close (UNIT=17)

101 IF (FLERR1 .NE. 0) THEN
write(*,*) 'Unable to open substrate file!'
40 END IF

102 IF (FLERR2 .NE. 0) THEN
write(*,*) 'Unable to create substrate output file!'
END IF
45

103 IF (FLERR3 .NE. 0) THEN
write(*,*) 'Unable to open initiator file!'
```


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```

END IF

104  IF (FLERR4 .NE. 0) THEN
      write(*,*) 'Unable to create initiator output file!'
5   END IF

105  IF (FLERR6 .NE. 0) THEN
      write(*,*) 'Unable to open light source file!'
10  END IF

106  IF (FLERR6 .NE. 0) THEN
      write(*,*) 'Unable to create light source output file!'
      END IF

15  107  IF (FLERR7 .NE. 0) THEN
      write(*,*) 'Unable to create cumulative output file!'
      END IF

      write(*,*) 'Program exiting normally...'
20  END

SUBROUTINE locate (xx,n,x,j)
INTEGER j,n
REAL x,xx (n)
INTEGER j1,jm,ju
J1=0
ju=n+1
10      if (ju-j1.gt.1) then
          jm= (ju+j1) /2
          if ((xx (n).ge.xx (1)) .eqv. (x.ge.xx (jm))) then
              j1=j m
          else
              ju=jm
35      endif
      goto 10
      endif
      if (x.eq.xx (1))then
          j=1
40      else if (x.eq.xx(n))then
          j=n-1
      else
          j=j1
      endif
45  return END

SUBROUTINE baseln (yy,N)

```


SUBROUTINE integ (yy,N,area)

INTEGER N,i

REAL yy (N),sum,area

5

i=0

sum=0

area=0

10

DO 10 i=1,N-1

sum=sum+ (yy(i)+yy (i+1))*0.5

10 CONTINUE

area=sum/100000

15

END

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APPENDIX 2

Program to create uniformly spaced csv data from unevenly spaced tabular data

```
5      #include <stdio.h>
      #include <stdlib.h>
      #include <math.h>

10     #define NMAX 3501
      #define STRMAX 151
      #define FNMAX 81
      #define OUTPTS 801

15     void locate(float xx[], unsigned long n, float x, unsigned long *j);
      void norm(float xx[], unsigned long int n);
      void baseline(float xx[], unsigned long int n);

20     int main()
      {
      char fnamein(FNMAX), string[STRMAX], *str, ptr,
      fnameout(FNMAX), another;
      float xdata(NMAX), ydata[NMAX], xinter[OUTPTS+1],
      yinter[OUTPTS+1];
25     unsigned long int index, i, j;
      int choice;
      FILE *fpin, *fpout;

      another = 'Y';

30     do {
          for (i = 0; i <= NMAX-1; i++) {
              xdata [i] = 0;
              ydata [i] = 0;

35          };

          for (i = 0; i <= OUTPTS; i++) {
              xinter [i] = 0;
              yinter (i) = 0;

40          };

      printf("Enter name of the input file (80 chars max, no spaces): ");
      scanf("%s", fnamein);

45     printf("File name is %s\n",fnamein);

      fpin = fopen(fnamein,"r");

      if (fpin == NULL) {
```


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```

fpout = fopen(fnameout,"w");

if (fpout == NULL) {
    printf("Cannot open %s\n",fnameout);
    exit(3);
};

for(i = 1; i <= OUTPTS; i++) {
    xinter[i] = 200+((float)i-1);
    locate(xdata,index,xinter[i],&j);
    if ((j == 0) || (j == index))
        yinter[i] = 0;
    else
        yinter [i] = (xinter [i] -xdata [j ]) * ((ydata (j+1] -ydata [j ]) /
            (xdata [j+1] -xdata [j ])) +ydata [j ] ;
};

if ((choice == 2) || (choice == 3)) {
    baseline(yinter,OUTPTS);
};

if (choice == 6) {
    baseline(ydata,index);
};

if ((choice == 1) || (choice == 3)) {
    norm(yinter,OUTPTS);
};

if (choice == 5) {
    norm(ydata,index);
};

if ((choice >= 1) && (choice <= 4)) {
    for (i = 1; i <= OUTPTS-1; i++) {
        fprintf(fpout,"%13.5E, ",yinter[i]);
    };
    fprintf(fpout,"%13.5E\n",yinter[OUTPTS]);
}
else
    if ((choice == 5) || (choice == 6)) {
        for (i = 1; i <= index-1; i++)
            fprintf(fpout,"%13.5E, ",ydata[i]);
        };
        fprintf(fpout,"%13.5E\n",ydata[index]);
    };

fclose(fpout);

```


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}

void baseline(float xx[], unsigned long int n)

{

5

unsigned long int i;

float mindata, temp;

mindata = xx [1] ;

temp = 0;

10

for(i = 2; i <= n; i++) {

if(xx[i] < mindata)

mindata = xx [i] ;

};

15

for(i = 1; i <= n; i++) {

temp = xx(i) - mindata;

xx(i) = temp;

};

}

APPENDIX 3

Program for Determining Strength of Wavelength Response in a Region

5

```
#include
<stdio.h>
#include
<stdlib.h>
#include
<math.h>

#define NMAX
3501
#define STRMAX
151
#define FNMAX
81
#define OUTPTS
801

void locate(float xx[], unsigned long n, float x,
unsigned long *j);
void norm(float xx[], unsigned long
int n);
void baseline(float xx[], unsigned
long int n);
void partinteg(float xx[], unsigned long int x1, unsigned long int
x2,
float *area);

int
main()
{
    char fnamein[FNMAX], string[STRMAX], *str_ptr,
    fnameout[FNMAX], another;
    float xdata[NMAX], ydata[NMAX], xinter[OUTPTS+1],
    yinter[OUTPTS+1];
    float
    totalarea,aA,aB,aC,aD,aE,aF,aG,aH,aI,aJ,a
    K;
    unsigned long int index, i,
    j;
    int choice;
    FILE *fpin,
    *fpout;
```

```
another = 'Y';

printf("Contact Rajdeep S. Kalgutkar, SRC-CRC 7-3003, for
further info\n");

do {
    for (i = 0; i <= NMAX-1;
i++) {
        xdata[i]=0;
        ydata[i]=0;
    };

    for (i = 0; i <= OUTPTS;
i++) {
        xinter[i]=0;
        yinter[i]=0;
    };

    printf("\nEnter name of the input file (80 chars max, no
spaces): ");
    scanf("%s",fnamein);

    printf("File name is
%s\n",fnamein);

    fpin =
    fopen(fnamein,"r");

    if (fpin ==
    NULL) {
        printf("Cannot open %s.
Exiting...\n",fnamein);

        exit(1);
    };

    index = 1;

    while (1) {
        str_ptr = fgets(string,STRMAX-
1,fpin);
        if(str_ptr == NULL)
            break;
        if(index == NMAX)
            break;
        sscanf(string,"%f
%f",&xdata[index],&ydata[index]);
```

```

        index++;
    };

    fclose(fpin);

    if((index == NMAX) && (str_ptr != NULL)) {
        index--;
        printf("Too many data points! Using first %d points
only...\n",index);
    }
    else {
        index--;
        printf("%d points
read...\n",index);
    };

    printf("\nEnter option for data
processing\n");
    printf("1: Simply interpolate the
data\n");
    printf("2: Normalize the data after
interpolation\n");
    printf("3: Baseline the data after
interpolation\n");
    printf("4: First interpolate, then baseline and finally
");
    printf("normalize the
data\n");
    printf("or\n");
    printf("0: to exit the program without any data
processing\n");
    printf("\nEnter option (0-
4): ");
    scanf("%d",&choice);

    if (choice == 0)

exit(2);

    printf("\nEnter name of the output file (80 chars max, no
spaces): ");
    scanf("%s",fnameout);

    printf("File name is
%s\n",fnameout);

    fpout =

```

```

fopen(fnameout,"w");

    if (fpout ==
NULL){
        printf("Cannot open %s.
Exiting...\n",fnameout);

exit(3);
    };

    for(i = 1; i <= OUTPTS;
i++) {
        xinter[i] = 200+((float)i-
1);
        locate(xdata,index,xinter[i],&j);
        if((j == 0) || (j ==
index))
            yinter[i] = 0;
        else
            yinter[i]=(xinter[i]-xdata[j])*((ydata[j+1]-
ydata[j])/
(xdata[j+1]-xdata[j]))+ydata[j];
        };

        if ((choice == 3) || (choice == 4)) {

baseline(yinter,OUTPTS);
        };

        if ((choice == 2) || (choice == 4)) {
            norm(yinter,OUTPTS);
        };

partinteg(yinter,51,OUTPTS,&totala
rea);

partinteg(yinter,51,101,&a
A);

partinteg(yinter,101,151,&
aB);

partinteg(yinter,151,201,&
aC);

```

```
partinteg(yinter,201,251,&
aD);
```

```
partinteg(yinter,251,301,&
aE);
```

```
partinteg(yinter,301,351,&
aF);
```

```
partinteg(yinter,351,401,&
aG);
```

```
partinteg(yinter,401,451,&
aH);
```

```
partinteg(yinter,451,501,&
aI);
```

```
partinteg(yinter,501,551,&
aJ);
```

```
partinteg(yinter,551,OUTPTS,&aK);
```

```
fprintf(fpout,"The total area is:
%14.6E\n",totalarea);
```

```
fprintf(fpout,"The area under region A is:
%6.2f%%\n",aA*100/totalarea);
```

```
fprintf(fpout,"The area under region B is:
%6.2f%%\n",aB*100/totalarea);
```

```
fprintf(fpout,"The area under region C is:
%6.2f%%\n",aC*100/totalarea);
```

```
fprintf(fpout,"The area under region D is:
%6.2f%%\n",aD*100/totalarea);
```

```
fprintf(fpout,"The area under region E is:
%6.2f%%\n",aE*100/totalarea);
```

```
fprintf(fpout,"The area under region F is:
%6.2f%%\n",aF*100/totalarea);
```

```
fprintf(fpout,"The area under region G is:
%6.2f%%\n",aG*100/totalarea);
```

```
fprintf(fpout,"The area under region H is:
%6.2f%%\n",aH*100/totalarea);
```

```
fprintf(fpout,"The area under region I is:
%6.2f%%\n",aI*100/totalarea);
```

```
fprintf(fpout,"The area under region J is:
%6.2f%%\n",aJ*100/totalarea);
```

```
fprintf(fpout,"The area under region K is:
%6.2f%%\n\n",aK*100/totalarea);
```

```

    for (i = 1; i <= OUTPTS-1; i++) {
        fprintf(fpout,"%13.5E, ",yinter[i]);
    };
    fprintf(fpout,"%13.5E\n",yinter[i]);

    fclose(fpout);

    printf("File %s
written.\n\n",fnameout);
    printf("Process another file
(Y/y/N/n)? : ");
    scanf("%1s",&another);
    } while (another == 'Y' || another
== 'y');

printf("Exiting...\n
");

return(0
);
}

void locate(float xx[], unsigned long n, float x,
unsigned long *j)
{
    unsigned long ju,jm,jl;
    int ascnd;

    jl=0;

    ju=n+1;
    ascnd=(xx[n] >= xx[1]);
    while (ju-jl > 1) {
        jm=(ju+jl) >> 1;
        if (x >= xx[jm] == ascnd)

    jl=jm;
    else

    ju=jm;
    }
    if (x == xx[1])
        *j=1;
    else if(x ==

```

```

xx[n])
    *j=n-
1;
    else
        *j=jl;
}

```

```

void norm(float xx[], unsigned long
int n)
{
    unsigned long
    int i;
    float maxdata,
    temp;

    maxdata =
    xx[1];
    temp =
    0;

    for(i = 2; i <= n; i++) {
        if(xx[i] >
        maxdata)
            maxdata =
            xx[i];
    };

    for(i = 1; i <= n; i++) {
        temp = xx[i]/maxdata;
        xx[i] = temp;
    };
}

```

```

void baseline(float xx[], unsigned
long int n)
{
    unsigned long
    int i;
    float mindata,
    temp;

    mindata = xx[1];
    temp =
    0;

    for(i = 2; i <= n; i++) {
        if(xx[i] <

```

```

mindata)
    mindata =
xx[i];
};

for(i = 1; i <= n; i++) {
    temp = xx[i] - mindata;
    xx[i] = temp;
};
}

```

```

void partinteg(float xx[], unsigned long int x1, unsigned long int
x2,
float *area)
{
    unsigned long
int i;
float temp;

temp =
0;

for(i = x1; i <= x2 - 1; i++)
{
    temp = temp + (xx[i] + xx[i+1])/2;
};

*area = temp;
}

```

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APPENDIX 4

SRC Curing Resource dB 4 Query Select2

```
5 Sub Initialize
    Dim ses ses As New NotesSession
    Dim db_db As NotesDatabase
    Dim view view As NotesView
    Dim note _note1 As NotesDocument, note_note2 As NotesDocument
10 Dim i cnt As Integer, i add As Integer

    Set db_db = ses ses.CurrentDatabase
    Set note_note1 = ses ses.DocumentContext

15 Redim Preserve arr WavelengthRegion(0) air WavelengthRegion(0) _ ""

    If note_note1.Selection1(0) <> "" Or rwte_note1.Selection2(0) <> "" Then
    If note_note1.Selection1(0) <> "" Then
    Set view_view = db_db.GetView("By NoteID")

20 If note_note1.Selection2(0) <> "" Then
    Set note_note2 = view_view.GetDocumentByKey(Right("00000000" &
    note_note1.Selection2(0), 8))
    Else
25 Set note_note2 = view_view.GetDocumentByKey(Right("00000000" &
    note_note1.Selection1(0), $))
    End If

30 If Not (note_note2 Is Nothing) Then
    If note_note2.HasItem("WavelengthRegion") Then
    i_cnt = -1
    Forall vals In note_note2.WavelengthRegion
        If vals <> "" Then
            i_cnt = i_cnt + 1
35 Redim Preserve arr WavelengthRegion(i_cnt)
            arr_WavelengthRegion(i cnt) = vals
        End If
    End Forall

40 End If
    End If End If

    If note_note1.Type(0) = "S" Then
        Set view-view = db_db.GetView("Substrate")
45 Elseif note_note1.Type(0) = "P" Then
        Set view-view = db_db.GetView("InitiatorSensitizer") Else
        Set view-view = db_db.GetView("LightSource") End If
```

‘ Set note note2 =view-view. GetFirstDocument

i_cnt = -1

5 Do While Not (note note2 Is Nothing)

If note_note2.Name(0) <> "" Then

L add = True

If arr WavelengthRegion(0) <> "" Then

Ladd = False

10 Forall vals1 In note_note2.WavelengthRegion

Forall vals2 In arr_WavelengthRegion

If vals1 = vals2 Then

i_add = True

Exit Forall

15 End If

End Forall

If Ladd Then

Exit Forall

20 End If

End Forall

End If

If L add Then

25 i cnt = i cnt + 1

Redim Preserve arr_names(i cnt)

arr names(i_cnt) = note_note2.Name(0)

End If

End It

30

Set note note2 = view-view. GetNextDocument(note_note2)

Loop

note _note1.Names = arr_names

35 End Sub

SRC Curing Resource dB 4 Query Select2 Save Agent

Sub Initialize

40 Dim ses sesAs New NotesSession

Dim db_db As NotesDatabase

Dim view view As NotesView

Dim note_note1 As NotesDocument, note_note2As NotesDocument

45 Set db_db = ses ses.CurrentDatabase

Set note note) = ses ses.DocumentContext

```

Select Case note_notel.Type(0)
Case "S"
Set view view = db_db.GetView("(Substrate)")

```

```

5 Set note_note2=view view.GetDocumentByKey(note_notel.Substrate(0))

```

```

Case "P"
Set view-view db-db.GetView("(InitiatorSensitizer)")

```

```

10 Set note note2 -view view.GetDocumentByKey(note_notel.Photolnitiator(O))

```

```

Case "L"
Set view-view =db db.GetView("(LightSource)")

```

```

15 Set note_note2 = view_view.GetDocumentByKey(note_notel.LightSource(0))

```

```

End Select

```

```

If note_notel.MexWction(0) = "Add" Then

```

```

20 If note_notel.Selectionl (0) <> "" Then
Print "[!" + note_notel.dbname(O) + "/QuerySelectionl?OpenForm&" &
note_notel.Selectionl (0) & "&" & note_note2.Noteld & ")"
Else

```

```

Print "[!" + note_notel.dbname(O) + "/QuerySelectionl?OpenForm&" &
note_note2.Noteld & "]"
25 End If Elseif note_notel.NextAction(O) = "Separate" Then

```

```

If note_notel.Selectionl(O) <> "" Then
Print "[/" + note_notel.dbname(O) + "/QuerySelectionl?OpenForm&" &
note_notel.Selectionl(O) & "&" & note_note2.Noteld & ")"
30 Else

```

```

Print "[!" + note_notel.dbname(O) + "/QuerySelectionl?OpenForm&" &
note_note2.Noteld & ")"
End If

```

```

Elseif note_notel.NextAction(O) = "Separate" Then
35 If note_notel.Selection2(0) <> "" Then

```

```

Print "[/" + note_notel.dbname(O) + "/QuerySelectionResults?OpenForm&" &
note_notel.Selection (0) & "&" & note_note2.Selection2(0) & _
"&" & note_note2.Noteld & "]"

```

```

Elseif note_notel.Selectionl(O) <> "" Then

```

```

40 Print- "[" + note_notel.dbname(O) + "/QuerySelectionResults?OpenForm&" &
note_notel.Selectionl (0) & "&" & note_note2.Noteld & ")"

```

```

Else

```

```

Print "[/" + note_notel.dbname(O) + "lQuerySelectionResults?OpenForm&" &
note_noteMoteld & "]"

```

```

45 End If

```

```

Else

```

```

If note_notel.Selection2(0) <> "" Then

```

```

Print "[" + note_notel.dbname(0) + "/QuerySelectionOverlayResults?OpenForm&" &
note_notel.Selection1(0) & "&" & note_notel.Selection2(0) &
"&" & note_note2.Noteld & ")"
Elseif note_notel.Selection1(0) <> "" Then
5 Print "[" + note_notel.dbname(0) + "/QuerySelectionOverlayResults?OpenForm&"
& note_notel.Selection(0) & "&" & note_note2.Moteld & ")"
Else
Print "[" + note_notel.dbname(0) + "lQuerySelectionOverlayResults?OpenForm&"
& note_note2.Noteld & ")"
10 End If
End If
End Sub

```

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SRC Curing Resource dB 4 Query Overlay Open Agent

Sub Initialize

5 pim ses_ses As New NotesSession
 Dim db_db As NotesDatabase
 Dim view-view As NotesView
 Dim note_notel As NotesDocument. note_note2As NotesDocument
 Dim i_cntAs Integer, i_addAs Integer

10 Set db_db = ses_ses.CurrentDatabase
 Set note_notel =ses_ses.DocumentContext

15 S et view-view = db_db. G etView("By N otel D ")

 If note_notel.Selection1(0) <> "" Then
 S et note-note2 = view-view. G etD ocumentByKey(R ight("00000000" + note_notel.
 S election"! (0). 8))

20 If Not (note _note2 Is Nothing) Then
 note _notel.data1 = note_note2.EmissData
 note_notel.maxfreq1 = note_note2.MaxFreq
 End If End If

25 If note_notel.Selection2(0) <> "" Then
 Set note-note2 = view view.GetDocumentByKey(Right("00000000" +
 note_notel.Selection2(0), 8))

30 If Not (note note2 Is Nothing) Then
 note_notel.data2=note_note2.EmissData
 note _notel.maxfreq2 = note_note2.MaxFreq
 End If End If

35 If note_notel.Selection3(0) <> "" Then
 Set note-note2 = view _view.GetDocumentByKey(Right("00000000" +
 note_notel.Selection3(0), 8))

40 If Not (note _note2Is Nothing) Then
 note_notel.data3 = note note2.EmissData
 note _notel.maxfreq3=note note2.MaxFreq
 End If End If End Sub

APPENDIX 5

```
import java.awt.*; import java.awt.event.*; import java.applet.*;
```

```
5 public class SRC Charts extends Applet { int gi count;
```

```
double GetHMax(String str_in) { String str_current; double dbl_hmax;
```

```
str_current = ""; dbl_hmax = 0; for (int i cnt = 0; i cnt < str_in.length(); i cnt++) {
```

```
10 if(str_in.regionMatches(i cnt, "", 0, 2))
```

```
if(Double.valueOf(str_current).doubleValue() > dbl_hmax)
```

```
dbl_hmax = Double.valueOf(str_current).doubleValue();
```

```
str_current = "" ;
```

```
i_cnt++;
```

```
15 gi count++; } else {
```

```
str_current = str_current.concat(str_in.substring(i cnt, i cnt + 1));
```

```
)
```

```
if(str_current.length() > 0) {
```

```
20 if(Double.valueOf(str_current).doubleValue() > dbl_hmax)
```

```
dbl_hmax = Double.valueOf(str_current).doubleValue(); gi count++; } return dbl_hmax;
```

```
int StringToInt(String str_in, double dbl_hmax) { double dbl_pos;
```

```
25 dbl_pos = getSize().height - (25 + (Double.valueOf(str_in).doubleValue() *  
((getSize().height - 50) / dbl_hmax))); return (int)dbl_pos; }
```

```
void drawChartLine(Graphics g, String str_in, String str_type, double dbl_maxfreq) {  
30 double dbl_x, dbl_inc, dbl_hmax; String str_last, str_next;
```

```
str_last str_next = "" ; dbl_x = 25; gi count = 0;
```

```
dbl_hmax = GetHMax(str_in); if(str_type.equalsIgnoreCase("S")) dbl_hmax = 100;
```

```
35 dbl_inc = (((double)getSize().width - 50) / gi count) * ((dbl_maxfreq - 200) / 800));
```

```

for (int i cnt = 0; i_cnt < str_in.length(); ) “, “, i c{
    nt++)if(str_in.regionMatches(i cnt, 0,
2))if(str_last.length(> 0) {
5 {
    g.drawLine((int)dbl x, StringToInt(str_last, dbl hmax), (int)(dbl x + dbl inc),
    StringToInt(str_next, dbl hmax));
    dbl x = dbl x + dbl inc;

10 str last = str_next; str next = “”; i cnt++;

    else { str next = str next.concat(str in.substring(i cnt, i cnt + 1));

    )
15 if(str_next.length() > 0)
    g.drawLine((int)dbl x, StringToInt(str_last, dbl hmax), (int)(dbl x + dbl-inc),
    StringToInt(strnext, dbl_hmax)); )

    public void paint(Graphics g) { double dbl x, dbl-y;

20 g.setColor(Color.black); g.drawLine(0, 0, getSize().width, 0); g.drawLine(25,
    getSize().height - 25, getSize().width - 25, getSize().height - 25); g.drawLine(25, 25,
    25, getSize().height - 25);

25 for(int i cnt = 0; i_cnt < 9; i cnt++) {
    dbl_x = 25 + ((double)i cnt * (((double)getSize().width - 50) / 8));
    g.drawLine((int)dbl x, getSize().height - 25, (int)dbl x, getSize().height - 20);
    g.drawString(String.valueOf((i cnt * 100) + 200), (int)dbl x - 8, getSize().height - 5); )

30 for(int i cnt = 0; i_cnt < 11; i_cnt++) {
    dbl-y = 25 + ((double)i cnt * (((double)getSize().height - 50) / 10));
    g.drawLine(20, (int)dbl-y, 25, (int)dbl-y);
    g.drawString(String.valueOf(100 - (i cnt * 10)), 1, (int)dbl-y + 5); )

35 g.drawString(“Data Overlay”, (getSize().width / 2) - 30, 12);

    g.setColor(Color.red); drawChartLine(g, getParameter(“Data 1 “), getParameter(“Type
    1 “), Double.valueOf(getParameter(“Max Freq 1 “)).doubleValue());
    g.setColor(Color.blue); drawChartLine(g, getParameter(“Data 2”),
40 getParameter(“Type 2”), Double.valueOf(getParameter(“Max Freq
    2”)).doubleValue()); g.setColor(Color.green); drawChartLine(g, getParameter(“Data
    3”), getParameter(“Type 3”), Double.valueOf(getParameter(“Max Freq
    3”)).doubleValue()); )

```